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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/850,356	05/07/2001	Allen J.C. Porter	00100.00.1280	2286

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EXAMINER

HENEGHAN, MATTHEW E

ART UNIT	PAPER NUMBER
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2134

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/850,356

Applicant(s)

PORTER ET AL.

Examiner

Matthew Heneghan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-32 is/are rejected.
- 7) ☐ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-32 have been examined.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: item 102 on p. 8, line 29.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(3) because figures 1, 2, and 4 include characters that cross lines.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement

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Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The use of the trademark Zip® has been noted in this application (see p.9, line 31). It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See

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MPEP § 2172.01. The omitted structural cooperative relationships are: It is not shown how the graphics rendering engine is related to the rest of the device.

7. Claims 19 and 27-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "the local memory" in line 3. There is insufficient antecedent basis for this limitation in the claim. For this examination, it is being presumed that this refers to the frame buffer memory.

Claim 27 recites the limitation "the memory protection module" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. For this examination, it is being presumed that claim 27 is dependent on claim 26, rather than claim 23.

Claims 28-32 depend from rejected claim 27, and include all the limitations of that claim, thereby rendering those dependent claims indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-5, 9, and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by WIPO Patent Application No. 02/25416 to Girard et al.

Regarding claim 1, Girard discloses a graphics controller, which displays rendered data (thus inherently includes a graphics rendering engine) (see p.5, second paragraph), that contains a frame buffer memory having both secure and insecure frame buffers (see p.7, second paragraph). The exemplary embodiments are improvements upon graphics controllers in a PC environment (see p.2, second paragraph), which inherently uses a user bus to interface (i.e. is coupled) with the graphics controller.

As per claim 2, the corners of a secure area are defined by registers (access registers) (see p.7, third paragraph).

As per claim 3, there is an embodiment wherein the security coordinates in the access registers cannot be changed once they have been defined (initialized) (see p.8, second paragraph).

As per claim 4, the secure area may only be read by a client via the secure interface, while other clients may read the insecure area through other interfaces (see p.8, last paragraph, continuing onto p. 9).

As per claim 5, the register is inherently programmable.

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As per claim 9, the controller may return erroneous data in response to an illegal request (see p.9, third paragraph).

As per claims 20-24, the frame buffer memory is wholly contained within the graphics controller memory (see p.5, second paragraph), thus making it "local."

9. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,825,879 to Davis.

Davis discloses a package wherein a frame buffer memory (see column 5, lines 40-45) is used on a computer that communicates using a PCI bus (a user bus) (see column 3, lines 44-53). Encryptors encrypt and decrypt data passed to and from the frame buffer memory (see column 5, lines 18-46).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 6, 7, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO Patent Application No. 02/25416 to Girard et al.

Girard, as described above, does not disclose the type of register to use as the access register.

Regarding claims 6 and 25, Official Notice is given that it is well-known in the art to use non-volatile memory for registers in order to preserve the contents of the register in the event of a computer power cycle.

Therefore it would be obvious to one of ordinary skill in the art to implement the system of Girard by using non-volatile registers, in order to preserve the contents of the register in the event of a computer power cycle.

Regarding claim 7, Official Notice is given that it is well-known in the art to use volatile memory for registers because they are less expensive and have faster access times than non-volatile equivalents.

Therefore it would be obvious to one of ordinary skill in the art to implement the system of Girard by using volatile registers, as they are less expensive and have faster access times than non-volatile equivalents.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO Patent Application No. 02/25416 to Girard et al. as applied to claim 4 above, and further in view of U.S. Patent No. 4,787,031 to Karger et al.

Girard does not disclose how it is determined whether or not a client is entitled to secure access.

Karger discloses a memory protection system having a privilege register to determine whether or not to allow perform operations (see column 11, lines 3-11). This

prevents an instruction from being executed when the processor is in the wrong operating mode (see column 3, lines 50-56).

Therefore it would be obvious to one of ordinary skill in the art to implement the system of Girard by using a privilege register to determine access, in order to prevent an instruction from being executed when the processor is in the wrong operating mode.

12. Claims 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,825,879 to Davis as applied to claim 16 above, and further in view of U.S. Patent No. 6,148,403 to Haneda et al.

Regarding claim 17, Davis does not disclose the selectively encryption of data.

The apparatus disclosed by Haneda allows for the selective encryption of data into a buffer for a graphics controller (i.e. a frame buffer) based upon the value of a flag (see column 14, lines 14-26). Haneda further suggests that this solves a problem wherein secret data can be viewed by others (see column 1, lines 54-61).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Davis by allowing for selective encryption, as this solves a problem wherein secret data can be viewed by others.

Regarding claim 19, Davis' apparatus can have a plurality of clients.

13. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over WIPO Patent Application No. 02/25416 to Girard et al. as applied to claim 23 above, and further in view of U.S. Patent No. 5,107,443 to Smith et al.

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Though Girard discusses security considerations, details of the implementation of a memory access protection module is not disclosed.

Smith discloses the consideration of "levels of privacy," wherein access may be denied to a private graphical region (see column 10, lines 34-60), and further suggests that this property allow for a shared workspace, which allows a user to share the contents of a private workspace without a cumbersome transfer operation (see column 3, line 60 to column 4, line 9).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to implement the invention of Girard by using levels of privacy, as this property allow for a shared workspace, which allows a user to share the contents of a private workspace without a cumbersome transfer operation.

Allowable Subject Matter

14. Claims 10-15 and 29-32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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16. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 10-12, 18, and 29, though WIPO Patent Application No. 02/25416 to Girard et al. discloses the prohibiting a client from reading from a defined region of a frame buffer, the mechanism for writing only allows for a privileged client to write to the entire frame buffer and prohibits others from writing to it at all. No art could be found that would suggest that the mechanism for the read functionality could be extended to the write functionality.

Additionally, U.S. Patent No. 5,107,443 to Smith et al. discloses the usage of access restrictions when writing to a graphical buffer area, but the access control is being implemented at the system level rather than on the memory controller, and it would not be obvious in view of Smith implement it at that level.

Claims 13-15 and 30-32 would be allowable based upon their dependence upon claims 12 and 29; however, the additional limitations presented therein are suggested by U.S. Patent No. 4,787,031 to Karger et al.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Heneghan, whose telephone number is (571) 272-3834. The examiner can normally be reached on Monday, Tuesday, Thursday, and Friday from 8:30 AM - 4:30 PM Eastern Time.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse, can be reached at (571) 272-3838.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

Or faxed to:

(703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GREGORY MORSE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

MEH *MEH*

December 6, 2004

